

I have with due care examined the film of the negative under the microscope in order to see if any defect or evidence of defective sensibility on parts of the film could be traced so as to account for the variability in the brightness of the stellar images, but I could not find any such evidence, and I would of course have repeated the photographic experiment if the state of the sky at any time during the past twelve months had permitted. Those who possess the necessary telescopic power may study by eye-observations the variability in these stars, and it is one of the functions of the photographic method to point out where eye-observations can with advantage be applied in search for special knowledge, and these ten stars are now indicated for that purpose.

*Observations of the Variable Star S (10) Sagittæ.*

By J. E. Gore.

The following are my observations of this short-period variable during the year 1889. They form a continuation of the observations given in *Monthly Notices* for March 1889.

The comparison stars are as before.

The comparison stars are as before.  
 II Sagittæ ... ... Mag. 5.8  
 DM. + 16°, 4086 ... ... 7.0

Date.	Dublin M.T.	Mag.	Date.	Dublin M.T.	Mag.
	h m			h m	
1889 Jan. 1	7 30	5.8	1889 Oct. 15	10 12	6.13
May 24	10 10	5.7	16	7 35	6.16
June 3	10 40	6.28	17	10 27	6.4
July 15	10 38	6.24	22	11 15	5.75
29	10 0	5.8	23	7 55	5.7
30	10 10	5.8	24	6 40	6.0
31	9 35	5.9	26	6 35	6.34
Aug. 3	10 35	6.4	28	6 35	5.9
11	10 45	6.4	30	6 37	5.75
20	9 55	6.45	30	10 45	5.7
24	9 5	5.8	Nov. 5	7 35	5.9
30	8 30	6.2	16	6 50	5.8
31	11 15	5.7	19	9 30	6.15
Sept. 4	9 0	6.3	23	5 35	5.8
8	8 10	5.8	25	7 14	5.75
22	10 50	6.52	28	7 8	6.24
24	10 15	5.9	Dec. 5	7 29	6.13
25	8 30	5.7 (?)	11	7 58	5.7
Oct. 7	9 2	6.2	13	5 35	5.97
11	10 33	5.8	18	5 27	5.6
12	7 37	5.8	20	7 40	5.8
13	6 40	5.8	22	6 10	6.08
13	10 47	5.8	24	5 52	6.28

The observation of December 18 was near the maximum epoch No. 567, reckoning from an assumed maximum observed by me 1876 December 14.

---

*Some Experiments relating to the Method of Obtaining the Coefficient of Absorption of the Wedge Photometer.* By Edmund J. Spitta.

In a paper read before the Society in November 1887, on 'The Appearances presented by the Satellites of *Jupiter* during transit,'\* attention was called to the discordant figures obtained when photometrically comparing a point of light, such as, for example, is exhibited by the stars, with an object of sensible area such as *Jupiter*. For the past two years or more an extensive series of experiments with the wedge photometer has been in progress, with the object of ascertaining the cause or causes of such discordance; but the subject has extended itself so much further than was anticipated, that it will be convenient to describe the results under three heads: (i) Those connected with the constant of absorption of the wedge photometer; (ii) the objections to employing such a form of photometer when dealing with objects of sensible area and the means devised to remedy the same; and (iii) idiosyncrasies in the photoperceptive faculty of the eye when viewing different sized areas. The object of this communication is to set forth the experiments connected with the first division of the subject only—viz., those concerning the constant of absorption of the wedge photometer, with a suggestion for an improved method of obtaining the same.

In the course of some experiments made at an early stage of the inquiry, with light of varying but known intensity, a suspicion was raised that the results obtained by the method of wedge extinction were incorrect. This suspicion was entertained both with experiments made on points of light, and areas of equal diameters but of different degrees of illumination.

The readiest means for the complete examination of this question was evidently to conduct the experiments in such a manner as to ensure the addition of a known quantity of light to the point or area under examination. In my earliest experiments I arranged three gas burners in an equilateral triangle, any or all of which could be made to illuminate a small disc of cardboard equidistant from the three, and similarly situated with regard to the gas burners. The wedge was used without a telescope, though a telescope tube was found convenient both to carry the wedge and give the means of easy direction. The intensity of the illumination of the cardboard disc by each of the gas burners was first examined and made sensibly equal, and then the intensity of the illumination when increased by the

\* *Monthly Notices*, vol. xlviii.